

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS  
(WORCESTER DIVISION)

	)	
G, a 12-year-old minor	)	Civil No. 4:15-cv-40116-TSH
suing by a fictitious name for privacy reasons,	)	
MOTHER, and FATHER, suing under	)	FIRST AMENDED AND
fictitious names to protect the	)	VERIFIED COMPLAINT
identity and privacy of G, their minor child,	)	SEEKING INJUNCTIVE RELIEF,
	)	ORDERING COMPLIANCE WITH
Plaintiffs,	)	THE AMERICANS WITH
	)	DISABILITIES ACT, AND
-v-	)	SEEKING DAMAGES FOR
	)	BREACH OF CONTRACT,
	)	MISREPRESENTATION, AND
THE FAY SCHOOL,	)	NEGLIGENCE
by and through its Board of	)	
Trustees, and ROBERT GUSTAVSON,	)	
	)	
Defendants.	)	
	)	

Twelve year-old Child G (“G”), Mother, and Father allege as follows for their First Amended Complaint against The Fay School (“Fay”) and Robert Gustavson (“Gustavson”).

## Summary Statement

(1) This First Amended Complaint is filed under the authority of Rule 15(a)(1)(B) which allows such an Amended Complaint as a matter of course; and this Amended Complaint is filed to add new facts learned, and to describe additional events occurring, since the original complaint was filed on August 12, 2015.

(2) Plaintiffs bring this action because defendants Fay, a private school, and its head of school, defendant Gustavson, have violated and continue to violate the rights of plaintiffs, who are G, a student at Fay, and his Mother and Father. Fay has done so by (i) disregarding G’s rights under the Americans with Disabilities Act (the “ADA”), (ii)

breaching Fay's contractual obligations to G, Mother, and Father (the latter two are sometimes referred to as "G's parents"), (iii) misrepresenting to G, Mother and Father the manner by which it would treat students with unusual physical conditions, such as those suffered by G, and (iv) failing to use ordinary care to assure G's safety while causing injury to him.

(3) G has a condition known as Electromagnetic Hypersensitivity Syndrome ("EHS"). This syndrome is triggered by intense and repeated exposure to radiofrequency/microwave radiation emitted from certain Wi-Fi systems such as those installed at Fay. Those with EHS suffer physical harm and pain when exposed to such Wi-Fi systems. Fay's Wi-Fi systems are not the lower-intensity, low-emission variety still used in most homes and in some other locations. Rather, the Wi-Fi systems Fay chose to install produce extremely high density radiofrequency/microwave radiation, hereinafter referred to sometimes as "Wi-Fi emissions, or "emissions."

(4) In addition to intense emissions, the Fay Wi-Fi systems are almost always in use, even when not needed, and are often set by Fay at the highest levels of intensity, causing and aggravating, in those persons affected, most notably younger persons, the symptoms of EHS, which include headaches, fatigue, stress, sleep disturbances, skin symptoms such as prickling, burning sensations and rashes, muscle aches, nausea, nose bleeds, dizziness and heart palpitations. The headaches are sometimes severe.

(5) Over the last 18 months, Fay has been informed repeatedly by G's Mother and Father, and by two qualified physicians, that G has EHS and that he has been suffering its symptoms when he is in the Fay classrooms. Citing both the ADA and Fay's written promises that it will make adjustments to assist any of its students with

disabilities or other physical conditions which it can accommodate or with which it can assist, G's parents have repeatedly asked defendant Fay to make reasonable adjustments in its Wi-Fi use which, if made, would likely prevent or reduce exposing G to these Wi-Fi emissions to a physically tolerable level. However, Fay has repeatedly refused to do so.

(6) Mother and Father have asked Fay to make these adjustments to its W-Fi systems because G's reactions to the Wi-Fi emissions qualify as a disability within the meaning of the ADA. G's symptoms are also, by any reasonable interpretation of Fay's Parent and Student Handbook promises to G and his parents, a physical condition as to which Fay has promised accommodation and assistance.

(7) Instead of working with the parents in a constructive way to solve the problem caused by its Wi-Fi emissions and the resulting symptoms suffered by G at Fay, Fay has engaged in a series of hostile actions toward G and his parents. Fay has refused to make any meaningful accommodations for or provide any meaningful assistance to G. Moreover, Fay has (i) refused to consider the medical evidence submitted by the parents about G's painful condition, (ii) ignored the evidence that G's symptoms occur only at Fay and nowhere else, (iii) refused to meet with the parents and their computer experts over the summer of 2015 (when the school had no students in session and thus it would have been the best time to examine Fay's Wi-Fi system without disturbing the educational process); (iv) then used the presence of students after Fay's summer break ended as an excuse not to allow a complete examination of Fay's Wi-Fi system or implement or even test various alternatives that might lower Fay's Wi-Fi emissions in G's classrooms; (v) banned G's parents from speaking with the teachers at Fay about his problem, (vi) threatened G's Mother that, if she used the Fay email system to discuss her

concerns about the Wi-Fi system with any teachers or other parents, G would be dismissed from Fay; (vii) refused, more recently, to allow G's parents to discuss G's homework assignments with his teachers (threatening to dismiss him from school if they speak to his teachers about anything); (viii) repeatedly demanded that G take drugs to mask but not cure his symptoms despite the serious side effects of those drugs; (ix) demanded that G and his parents submit to examinations by doctors of Fay's choosing even though those doctors stated openly at the outset that they do not believe that Wi-Fi can cause the symptoms G has suffered; and, (x) forced G, as a condition of continuing at Fay, to submit to a humiliating psychological examination even though he has never manifested any symptoms of any psychological problem.

(8) Because Fay has not made any meaningful adjustments to its Wi-Fi system or even cooperated in determining how to do so, G's symptoms while at Fay have worsened to the point that frequently he can no longer sit in the classrooms and must instead engage in home study of the Fay curriculum. However, Fay has even made this home study more unpleasant and less productive for G because it has refused to allow G to be on the Fay campus for any reason, including for his beloved athletics, so that he can have at least some social contact with his peers at school. Fay has also made this home study academically unworkable by refusing to allow G, sitting at home, to listen in to his class instruction by Skype or to allow G's parents, at their own expense, to have G's classes recorded so that G can listen to them at home, in consultation with a tutor G's parents have hired.

(9) Moreover, Fay has even refused to inform that tutor of the daily lesson plans of each class so that he can, in an informed way, tutor G on the curriculum G must

study and master to pass the courses involved, while at the same time insisting that G keep current academically and pass each class – without listening to the classes or recordings of them or receiving any instructions about the course work from each of his teachers, which they could easily provide. Indeed, thus far, the tutor is not being contacted by the teachers of G’s classes and thus is not being informed about the subject matter about which he should tutor for the classes of those teachers.

(10) By these and other actions, Fay is attempting to make it so difficult for G to remain at Fay that G’s parents will simply be forced by his condition to temporarily remove him from Fay, go elsewhere for his education, and thus temporarily abandon the valuable and very costly educational experience that Fay promised to deliver to G over the nine-year program Fay offered to him and his parents, and for which his parents have paid over \$150,000.00, until Fay complies with its obligations described in its Parent and Student Handbook and under the law.

(11) Fay’s conduct violates the ADA, breaches Fay’s contractual promises to G, Mother and Father, shows that the prior statements made by Fay about how it would treat a child with G’s conditions were misrepresentations by Fay, and amounts to negligence which has been the proximate cause of injury and damages suffered by G.

(12) This lawsuit seeks damages for the injuries suffered by G which have been caused by Fay’s conduct as alleged herein. Plaintiffs also seek injunctive relief in the form of an order from this Court directing Fay to make adjustments in its Wi-Fi use so as to prevent ongoing harm to G so that G can return to Fay and continue the education that he deserves and for which his parents have paid substantial sums of money.

### **Jurisdiction and Venue**

(13) This Court has subject matter jurisdiction over Count I pursuant to 28 U.S.C. § 1331 because Count I is brought under the ADA (Title 42 U.S.C. §12182(a)) and therefore is a claim arising under the laws of the United States.

(14) This Court has supplemental jurisdiction over the claims brought in Count II, for breach of contract, and Count III, for misrepresentation, and Count IV, for negligence, because these state claims are so related to Count I, which is within the original jurisdiction of this Court, that Counts II, III and IV form part of the same case or controversy within the meaning of 28 U.S.C. §1367.

(15) Venue is proper in this District under 28 U.S.C. §1391 because, as more specifically alleged below, both defendants either reside or have their principal place of business within this District and a substantial part of the events occurred here.

### **The Parties**

(16) Plaintiff G resides within this District and sues herein under this fictitious name because he is a 12-year-old minor.

(17) Mother and Father are the parents of G and reside within this District. They sue as Mother and Father rather than by their own names because naming them would reveal the identity of G.

(18) Defendant Fay is a private educational institution incorporated under the laws of the Commonwealth of Massachusetts. Fay has its campus and principal place of business in the Town of Southborough, Massachusetts, within this District.

(19) Defendant Gustavson resides within this District. He is the head of Fay, acts on behalf of Fay within the course and scope of his duties at Fay, and thus his actions bind Fay under the doctrine of *respondeat superior*.

### **Facts Relevant to all Counts**

#### **The Fay School**

(20) Fay is a private, co-educational, boarding school.

(21) Fay is a “place of public accommodation” within the meaning of the ADA (42 U.S.C. §12181(7)(J)) and is therefore subject to the requirements of the ADA. As a result, Fay may not discriminate against any disabled student in any manner preventing that student from the full enjoyment of the services, facilities, privileges, or advantages offered by Fay. When any student has a disability but otherwise meets Fay’s academic requirements and complies with its rules of behavior, such as G has done for over six years, Fay must provide any reasonable accommodation to that disabled student that would allow that student to have the full and equal enjoyment of the goods, services, facilities, privileges, or advantages offered by Fay to all of its other students.

(22) Fay offers a day school program for children from pre-kindergarten through the ninth grade. Day students at Fay, such as G, come to the Fay campus weekdays during the school year (and they will sometimes be on campus for weekend events), attend their assigned classes in the classrooms chosen by Fay staff, participate in school functions offered outside of the classrooms, and then leave the campus in the late afternoon, returning home to their parents or guardians. The Fay day-school program is cumulative in its benefits. Each year’s instruction builds on the last least year so that the longer a student stays at Fay, the more beneficial the cumulative effect of its educational

program. Staying for the entire nine years is thus more beneficial educationally, socially, and developmentally. Parents pay very high tuition to achieve the goal of a complete Fay education from years one through nine.

(23) Fay is responsible for day students' supervision, care and physical well-being while they are on its campus during the day. The students are under the control of Fay teachers and staff and are told what to do, how to behave, what classrooms to attend at particular times of the day, and where in those classrooms they should sit. Fay's students, including G, are invitees when they are anywhere on Fay's campus, including its classrooms, and Fay has a duty to care for them in a reasonable manner in light of whatever circumstances and conditions are known to Fay.

(24) Fay requires its students and their parents to sign and be bound by a Parent and Student Handbook (the "Handbook") that sets forth certain rights and obligations of the students, their parents, and Fay relating to student life at Fay. This Handbook is a contract between the parents, the students and Fay, and each is bound by its terms. Among other matters, this Fay Handbook, by its wording, specifically obligates Fay to keep as a "core value . . . the wellness of mind, body and spirit of each student."

(25) Fay also promises in the Handbook that it will provide each student with "a safe and supportive environment," that "recognizes, respects, and celebrates the full range of human diversity," that it will help when students "are in physical need," that it will "recognize and celebrate . . . disabilities," that it "affirms the necessity of respect for individual differences," and that it will "maintain an environment in which all community members feel supported."



(26) In addition to those promises contained in paragraphs 24 and 25, above, the Fay Handbook assures all students and their parents that Fay will admit and educate students otherwise qualifying for admission regardless of whether any such student has “any disability that can be reasonably accommodated by the School.” The Fay School promise concerning disabilities does not limit itself to any particular disability and Fay also assures all students that they will be afforded:

all rights, privileges, programs, and activities generally accorded or made available to students at Fay School. The School does not discriminate on the basis of such factors in the administration of its educational policies, employment policies . . . or other school administered programs.

By G’s enrolling in Fay, his parents paying the required tuition and signing the Tuition Contract that binds the parents and child to the terms of the Handbook, G, Mother and Father became entitled to all the rights conferred by the promises quoted in paragraphs 24 through 26, above. Fay therefore became and remains contractually bound to keep those promises.

### **G’s Decision to Attend Fay**

(27) G is a promising young man who has worked hard at his studies in order to maximize his opportunities to continue attending a worthwhile day school, thereby furthering his education and maximizing his opportunity to attend a good secondary school and, thereafter, a college or university of his choice. He is a student who, like most students, will live up to his academic potential in a physically safe and sympathetic school environment such as the one promised by Fay and for which Fay charges each family over \$30,000.00 each year. G and his parents chose Fay over other educational opportunities in substantial part because of its promise of diversity and tolerance, its professed care for student wellness and fair treatment of all students, and its promise to

provide any help it can to “any student in physical need,” all of which, they believed, would maximize his chances for academic success and thus justify the sacrifice required in order to pay the expensive private school tuition charged by Fay. In choosing to attend Fay, G and his Mother and Father gave up other educational opportunities in reliance upon Fay’s promises and with the belief that it would keep those promises and comply with the law. They have devoted themselves to Fay’s program now for over six years.

### **G’s Performance at Fay**

(28) From the time G arrived at Fay in 2009, and for the next six academic years and one additional term thereafter, G has been and remains recognized by both the Fay faculty and staff as a likeable, outgoing, and academically-capable young man. G also has been and remains socially well-adjusted. He had made good grades and has participated fully and positively within the Fay community. G has observed all of the Fay rules and respects its Core Values. In all respects G meets and well exceeds the academic and social expectations and requirements imposed by Fay in its Handbook, and this remains true even since the Fay Wi-Fi systems have caused G to suffer from the painful symptoms of EHS described in this First Amended Complaint. Indeed, during the fall term just completed in November, 2015, G was praised for his efforts in a very difficult Latin class and met its academic requirements even though, during the term, he missed classes because he was suffering from the symptoms of EHS, which substantially impaired his abilities through headache pain, nausea, dizziness and other symptoms.

(29) G has now been in attendance at Fay for six years and one term. He and his parents therefore have more than six full years invested in the nine-year educational plan set by Fay, a substantial investment of time, effort, money and the opportunity cost

of having foregone other educational opportunities. His friends and peers are at Fay, and he has developed solid and important learning relationships with many of Fay's faculty and staff. It would therefore be highly disruptive, educationally, socially and developmentally, to permanently remove G at this time from Fay's program into which he has settled and, instead, to place him into an entirely different program while leaving all his friendships and faculty relationships developed over more than six years, along with Fay's teaching method and its progression over the last six years of its nine-year plan.

### **The Symptoms Suffered by G**

(30) Students at Fay are taught in classrooms in which the teachers and their students use computers as teaching aids. There are normally no more than 15 students in each class, and sometimes fewer students. The students each have or are loaned laptop computers for use in class. This allows them to connect to the internet, which they use during class instruction, with the faculty and students each using the internet to gain access to information concerning whatever topic is being taught. Connection to the internet can be made by an Ethernet cable that is plugged in to the internet source and then plugged in to each of the laptops. Alternatively, Fay can use Wi-Fi emissions from access points throughout its buildings to transmit internet access to each laptop by radio wave, thus dispensing with the need for Ethernet cables.

(31) Sometime in or around the spring term of 2013, Fay installed, near each of its classrooms, a new Wi-Fi system, known as the "Aerohive Wi-Fi Network." This is a high-density, industrial-capacity wireless system which, because of its antennae structure and other components when operating, causes the Wi-Fi systems at Fay to emit

substantially greater, high density radiofrequency/microwave emissions than the emissions coming from the preexisting system when it was operating alone. Exposure to the emissions from the combined Wi-Fi systems now used by Fay is dangerous to persons with an aggravated sensitivity to those emissions, those afflicted with EHS, as will be explained in more detail further below. Moreover, even the cumulative effect of the older system can cause EHS symptoms.

(32) Sometime shortly thereafter, also in the spring of 2013, G started to experience occasional, troubling symptoms which he reported to his parents when he came home from Fay at the end of the school day. These included headaches, itchy skin, and rashes. These symptoms receded after G had been home for several hours. Moreover, G had no such symptoms over the weekends, when he was not subjected to any such Wi-Fi system. These symptoms continued on and off for the remainder of the 2013 spring term but then abated at the beginning of the summer, when G was no longer in Fay classrooms.

(33) Thereafter, when G returned to the Fay campus in the fall of 2013 for the 2013/2014 academic year, his fifth full year at Fay, G's symptoms returned. They became more pronounced as that academic year progressed, with G having to go to the infirmary suffering from headaches, nose bleeds, dizziness, chest pains and nausea. More and more often he had to leave school early. Once home, as had been the case the spring before, G's symptoms abated over the course of the afternoon and evening, but returned the following day, if he returned to Fay. As had also been the case the academic year before, when Fay was not in session, on weekends and over holidays, G did not experience these symptoms, which only returned when he had been in the Fay classrooms.

(34) During that spring (2014), Mother and Father had G medically examined for many potential causes and the physicians involved found no medical cause for his symptoms among those potential causes for which he was being examined and tested, which did not include EHS, as it was not yet suspected as a cause of G's symptoms.

(35) Then, on April 11, 2014, Mother went to school to pick up G from the nurse's office on one of the more and more frequent occasions when he was experiencing symptoms, and while there discussed the frequency of these symptoms with the nurse. The nurse indicated that various children in the same classes that G was attending were reporting to the Fay Health Center with similar symptoms. This led the mother to a study of the Wi-Fi systems being used in the Fay classrooms and the possibility that G's symptoms were caused by them.

(36) Mother concluded, after much study, that Fay's Wi-Fi systems were the probable cause of G's symptoms because he suffers from EHS.

### **Electromagnetic Fields and EHS**

(37) EHS, Electromagnetic Hypersensitivity Syndrome, is the term that has been adopted by various experts worldwide to describe the reaction of those who suffer adverse reactions to the effects of electromagnetic fields, such as those emitted by Wi-Fi.

(38) EHS has been recognized as a disability of those who suffer its effects. As reported in research on Indoor Environmental Quality by the United States Access Board<sup>1</sup>, "electromagnetic sensitivities may be considered disabilities under the ADA if they so severely impair the neurological, respiratory or other functions of an individual

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<sup>1</sup> The United States Access Board is an independent federal agency created by Congress in 1973 to ensure access to federal facilities by the disabled under the Americans with Disabilities Act. *See* [www.access-board.gov](http://www.access-board.gov).

that it substantially limits one or more of the individual's major life activities.” Access Board, Background for Final Rule, Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities. Further,

The presence of electromagnetic fields from office equipment and other sources is a barrier for those with electromagnetic sensitivities . . . .

Measures taken to improve indoor environmental quality, such as reducing air pollution, noise and electromagnetic fields in buildings, will increase their accessibility for people with asthma and/or electromagnetic sensitivities, as well as provide a more healthful environment for all building occupants.

*Id.*

(39) Symptoms of those who suffer from EHS include a higher risk of developing headaches, increases in heart rate, arrhythmias, changes in blood pressure, dizziness, and sleep deprivation, among others. *See*, Environmental Health Trust,<sup>2</sup> *Best Practices with Children and Wireless Radiation - a Review of Science and Global Advisories*, 4-5 (July 2015). Similarly, in an article prepared by Norm Alster through the Edmond J. Safra Center for Ethics at Harvard University, he cites a study conducted in 2013 by Indian scientists S. Sivani and D. Sudarsanam in which they state: “Based on current available literature, it is justified to conclude that . . . [electromagnetic fields] . . . can change neurotransmitter functions, blood-brain barrier, morphology, electrophysiology, cellular metabolism, calcium efflux, and gene and protein expression

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<sup>2</sup> The Environmental Health Trust is an IRC 501(c) (3) organization that educates individuals, health professionals and communities about controllable environmental health risks and policy changes needed to reduce those risks. Past projects include: local and national campaigns to ban smoking and asbestos, exploring what factors lie behind puzzlingly high rates of fibroid tumors, breast cancer and endometriosis in young African American women, and building environmental wellness programs in Wyoming and Pennsylvania to address the environmental impacts of energy development on buildings and interior environments. *See* <http://ehtrust.org>.

in certain types of cells even at lower intensities.” Norm Alster, *Captured Agency: How the Federal Communications Commission is Dominated by the Industries It Presumably Regulates*, 11 (Edmond J. Safra Center for Ethics, Harvard University, 2015) (<http://www.ethics.harvard.edu>).

(40) The above-quoted studies, along with others, have prompted many governments to address the effect that electromagnetic fields have on humans, most specifically on children. In an appeal made to the United Nations by over 200 scientists in 2015, Martin Blank, Ph.D., of Columbia University, stated:

International exposure guidelines for electromagnetic fields must be strengthened to reflect the reality of their impact on our bodies, especially on our DNA. The time to deal with the harmful biological and health effects is long overdue. We must reduce exposure by establishing more protective guidelines.

Business Wire, *International Scientists Appeal to U.N. to Protect Humans and Wildlife from Electromagnetic Fields and Wireless Technology* (May 11, 2015).

(41) Although the United States ADA Access Board has not created a list of disabilities, the Board is responsible for establishing building guidelines that adhere to ADA standards. In creating these guidelines, the Board takes into consideration those diagnoses that could be considered disabilities under the ADA definition. It noted: “According to the Americans with Disabilities Act and other disability laws, public and commercial buildings are required to provide reasonable accommodations for those disabled by chemical and/or electromagnetic sensitivities.” *See Access Board Guidelines, supra*.

(42) The Environmental Health Trust reports a long list of countries that have addressed electromagnetic exposure. According to EHT, France enacted legislation in

2015 restricting the use of Wi-Fi in elementary schools; in 2013, Ghent, a municipality in Belgium, banned the use of Wi-Fi in public spaces that cater to children age 0-3 years; Spain voted to urge the removal of Wi-Fi in schools; and countries with as differing cultures and political leanings as Switzerland, Germany, Austria, and Russia have recommended that Wi-Fi not be used in schools, and, as alternatives, that schools use Ethernet or fiberoptic connections. See, Environmental Health Trust, *Best Practices*, *supra*, at 13-16. Closer to home, Suffolk County in New York began requiring in 2014 that public buildings using a wireless router place a label outside to alert the public of its use upon entering the building. *Id* at 16.

(43) Given the above and other studies, persons afflicted with EHS suffer a disability within the meaning of the ADA because, in those persons, it substantially limits one or more major life activities, including “learning,” “reading,” and concentrating, all of which are specifically included by name within major life activities enumerated under the ADA, Title 42 U.S.C. § 12102(2)(A).

#### **G’s Specific EHS Diagnosis**

(44) G has been diagnosed by a medical doctor as having EHS. After learning of EHS, Mother and Father had G examined by Dr. Jeanne Hubbuch, a physician to whom they were referred by environmental health specialists. Dr. Hubbuch specifically determined that G suffered from EHS as a result of exposure to the Fay Wi-Fi system. In a letter summarizing her findings, Dr. Hubbuch noted that other causes of these symptoms had been ruled out by prior examinations and testing, and concluded that:

Evaluation by G’s pediatrician has not revealed any significant problems. He has a history of seasonal allergies and immediate IgE reactions to tree nuts and peanuts. He has [an unrelated condition.] None of these conditions explain his current symptom pattern. It is known that exposure to WIFI can



have cellular effects. The complete extent of these effects on people is still unknown. But it is clear that children and pregnant women are at the highest risk. This is due to the brain tissue being more absorbent, their skulls are thinner and their relative size is small. There are no studies that show that exposure to these two vulnerable groups is safe. We do not know the long term effects of microwave radiation on students and teachers. According to reports from the nurse at The Fay School, there has been an increase over the last year of students complaining of similar symptoms, *i.e.* headaches, dizziness, nausea and chest pressure. A good reference for this is the website of Environmental Health Trust ([www.ehtrust.org](http://www.ehtrust.org)).

It is my opinion, based on my medical training and experience, especially my training in Environmental Medicine that [G] is being adversely affected by prolonged exposure to WIFI at school. Due to biochemical individuality some people are more susceptible to these effects than others. This should be considered seriously since subtle changes are occurring for all even if it is apparent in only a few.

I agree that the precautionary principle should apply here. Many countries have adopted this principle when approaching young children and have adopted stricter regulations to reduce exposure to wireless radiation.

If [G] continues to be exposed on a regular basis to WIFI, it is possible that his intermittent symptoms will become more constant and interfere with his school performance.

*See* Exhibit “A,” annexed hereto, Letter from Dr. Jeanne Hubbuch, dated August 7, 2014. Dr. Hubbuch’s letter was sent to Fay in the summer of 2014.

(45) Thereafter, Dr. Hubbuch’s diagnosis was confirmed by Dr. Martha Herbert, Assistant Professor of Neurology, Harvard Medical School, and a clinician. Dr. Herbert independently examined G neurologically and reviewed all his medical and testing records. She then confirmed the diagnosis of Dr. Hubbuch and gave her separate opinion that it was “entirely reasonable to diagnose G with Electromagnetic Hypersensitivity Syndrome.” *See* Letter from Dr. Martha Herbert, dated September 12, 2015, annexed hereto as Exhibit “B”. Dr. Herbert also recommended that Ethernet cable be used at Fay wherever possible instead of Wi-Fi, warning that G’s symptoms

accumulate during the course of the day and over time: and that “the physiological depletion most likely associated with these exposures will also be cumulative, and increase G’s risk for further symptoms and health problems.”

**Fay’s Stubborn Refusal to Attempt Any Accommodation**

(46) Because of the medical testing and diagnosis referred to above, Mother and Father have sought over the last 18 months to work with Fay to find an accommodation that would allow G to continue at Fay without suffering his EHS symptoms. They informed Fay of the Hubbuch diagnosis discussed above back in the summer of 2014 and sent two separate communications confirming that diagnosis from Dr. Hubbuch. They have since sent Fay the separate opinion letter of Dr. Herbert. Others in this field have sent various writings to Fay describing EHS and the concern of its health impacts on children who are afflicted with it. Indeed, in the summer of 2014, the Fay Board of Trustees received four letters<sup>3</sup> from experts in electromagnetic fields discussing their effects in schools on students when these fields are present in high density. These letters all expressed concern that some students at the Fay school were experiencing the symptoms of EHS and urged the school’s board to reconsider its choice of using Wi-Fi within the school, unless done with some real and effective attempt at accommodation. In his letter, Dr. Carpenter states:

. . . while acute electrosensitivity symptoms, like the ones I understand your students are experiencing, are of course of great concern (such as

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<sup>3</sup> See the letters collectively annexed as Exhibit “C”: Letter dated July 28, 2014 from Dr. David O. Carpenter, Director, Institute for Health and the Environment, University of Albany; Letter dated July 25, 2014 from Martin Blank, Ph.D., leading expert on the effects of electromagnetic fields on DNA and biology; Letter dated July 16, 2014 from Stephen Sinatra, M.D., co-founder of Doctors for Safer Schools; Letter dated July 24, 2014, from Olle Johansson, Associate Professor of neuroscience at Karolinska Institute, in Stockholm, Sweden.

cognitive effects impairing attention, memory, energy levels and concentration; cardiac irregularities, including in children; or headaches or other symptoms in students wearing braces), the full effects for society from chronic and cumulative exposures are not known at this time. Given what we do know, however, including the DNA effects, I must, as a public health physician, advise minimizing these exposures as much as possible. Indications are that cell phones and wireless technologies may turn out to be a serious public health issue, comparable to tobacco, asbestos, DDT, PCBs, pesticides and lead paint, or possibly worse given the ubiquitous nature of the exposures.

[*See*, Exhibit C.]

(47) The concerns and advice expressed in Dr. Carpenter's letter were echoed by the three other experts who sent letters (see Exhibit C) to the Fay trustees, as well as by the studies and reports referred to further above, and through other materials publicly available.

(48) Based on all of the above, Mother and Father repeatedly asked to work with Fay to determine the assistance that Fay could give, all to be paid for by Mother and Father, in order to determine if its internet cable access could be restructured in some way to make it less painful for G to attend in the classrooms.

(49) The repeatedly-expressed purpose of these requested meetings was to allow examination and measurement of the Wi-Fi systems used in those classrooms and to determine ways to minimize their Wi-Fi emissions. The parents explained that they wanted to determine if Fay could arrange, at the expense of Mother and Father, either (1) for Ethernet cords to be used in those classes instead of Wi-Fi, when G is in attendance,<sup>4</sup>

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<sup>4</sup> This Ethernet option has two separate possibilities. The first is to have Ethernet capability for all of the desks in the classroom. This would allow for the complete shut off of the Wi-Fi in the affected classroom. Another possibility would be to provide an Ethernet for the desk at which G is sitting. This by itself would allow for a substantial reduction of the Wi-Fi emissions to which G is exposed because a substantial part of those emissions come not from the Wi-Fi transmitter found somewhere in the classroom, which emanates throughout the classroom, but comes from the communication from the individual laptops back to that transmitter. That is indeed the more

(2) to determine if the Wi-Fi emissions could be turned down or readjusted while G is in the classroom, or (3) if there is a part of the classrooms involved where the emissions are less strong so that G could be seated in those areas to determine if that would abate his EHS symptoms and if not, why not. These meetings to review and consider these potential solutions have been proposed to Fay repeatedly over the course of 2014 up through the late summer of 2015, particularly during the summer months of 2015 when, as the parents urged Fay, there were no students and very few staff in attendance at Fay, and thus when there would have been ample opportunity to do any needed testing and review of Fay's Wi-Fi systems and to undertake experimentation with alternative ways to deliver internet service into the classrooms in such a way as to avoid subjecting G to significant Wi-Fi exposure.

(50) Fay steadfastly refused to meet with the parents for any of these purposes throughout this entire period, despite requests by the parents. Instead, Gustavson, and others at Fay speaking on its behalf and under the direction of Gustavson, refused any discussions about their Wi-Fi systems, much less to reveal its technical workings to Mother and Father or to meet and confer about alternative solutions. They refused to do so despite the promises and representations in Fay's Handbook that Fay would provide each student with "a safe and supportive environment," that "recognizes, respects, and celebrates the full range of human diversity," that it will help when students "are in physical need," that it will "recognize and celebrate . . . disabilities," that that it "affirms the necessity of respect for individual differences," that it will "maintain an environment

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intense radiation. Allowing Ethernet to G's laptop alone would stop the need for those Wi-Fi emissions, the ones closest to him. If this option were tried along with placing G in the part of the classroom receiving the least intense emissions from the general Wi-Fi transmitter found in the classroom, there could well be an even greater avoidance of Wi-Fi emissions.

in which all community members feel supported,” and will work with “any disability that can be reasonably accommodated by the School.” All these representations and promises were rendered false and dishonored by Fay’s refusal to take any of the actions requested relating to G’s symptoms, symptoms which had been confirmed by a medical doctor.

(51) Instead, Fay and Gustavson simply stated that Fay’s Wi-Fi systems meet the requirements set by the Federal Communication Commission (“FCC”) radiofrequency radiation guidelines adopted 20 years ago in 1996, as these had been recommended by the Environmental Protection Agency (“EPA”). It did not matter to Fay that G was in pain and suffering other symptoms frequently at school. Fay has simply fallen back on these outdated guidelines as an excuse to ignore its Wi-Fi-triggered symptoms, refusing to reconsider its position or to take meaningful steps to assist G, as its Handbook promises, despite the fact as long ago as 2002, the EPA itself clarified, by letter annexed hereto as Exhibit “D,” that these guidelines were only applicable to thermal emissions and “do not apply to chronic, nonthermal exposure situations.” (*Id.*, page 1.) Wi-Fi emissions have such a non-thermal effect on the human body, and the EPA Guidelines were addressing only thermal exposure in their 20 year-old guidelines. That 2002 publication goes on to explain that the FCC Guidelines “are believed to protect against injury that may be caused by acute exposures that result in tissue heating or electric shock and burn.” *Id.* The EPA itself states that they have no application to Wi-Fi emissions.

(52) Despite the stated inapplicability of these thermal guidelines by the agency issuing them now 20 years ago, when Wi-Fi was not even a factor in the educational systems in this country, and despite the fact that Fay has been repeatedly sent a copy of

the EPA publication, Exhibit D, stating's that its earlier guidelines are inapplicable to Wi-Fi, Fay has stubbornly clung to its position that these guidelines are a complete justification for its refusal to take any meaningful action to accommodate G's symptoms despite the medical opinions, warnings, and reports it has received and the many more that are readily available to it.

(53) Worse than simply refusing to meet and confer with the parents, Fay and Gustavson have actually punished the parents and G for trying to solve this problem. They insisted that Mother and Father not speak to various relevant personnel on campus about G's problem. They have threatened to refuse to allow G to stay at Fay if the parents discuss this problem with anyone in the Fay community.

(54) Fay also insisted, as a precondition to G being allowed to continue at Fay, that G be seen by "specialists" chosen by Fay. Mother and Father, while believing that the EHS diagnosis already made by Dr. Hubbuch (Exhibit A) and Dr. Herbert (Exhibit B) were sufficient, nonetheless arranged visits to the Fay-designated doctors in the hopes that this would finally, without court intervention, cause Fay to meet and confer about possible assistance.

(55) Fay actually demanded that G be seen by two different physicians. The first saw G on June 29, 2015. Yet despite Fay's stated wish to have what it insisted upon as a meaningful examination by this doctor who was being forced upon G and his parents, Fay failed to even provide to that doctor a full set of G's medical records before the examination, despite being asked to do so by G's parents, in writing. Moreover, when that doctor did see G, he conducted no tests. He only spoke to G for 10 minutes, after speaking with Mother and Father. He then pronounced that he did not believe in EHS.

Yet he made no alternate diagnosis as to the cause of any of G's symptoms. In the end, however, he recommended that G's parents and Fay "work closely together to ensure that G has the optimal learning environment at Fay for the upcoming school year."

(56) Despite the fact that working closely together was the recommendation of Fay's designated doctor and that his recommendation was quite similar to some of the promises made in Fay's Handbook, Fay still refused to do anything meaningful about its Wi-Fi systems, nor to work with Mother and Father to try to minimize G's exposure to Wi-Fi, despite being continuously asked to do so.

(57) Since the report of this physician was made and sent to Fay, on June 29, 2015, Mother and Father repeated to Fay their long-held request that Fay meet and confer with Mother and Father, examine the Wi-Fi systems and the classrooms in which G would be seated in the upcoming fall term, set to commence on September 9, 2015, and determine whether there is a way to make them Wi-Fi free at least as relates to G, or to minimize his exposure to Wi-Fi. Fay responded by refusing to do so and, instead, by insisting that, as a condition for returning to Fay this past fall, that G must also be seen by yet another specialists of its choosing and undergo a psychological study, despite the complete lack of any indication that there was any psychological condition at all.

(58) Yet when the Mother of G contacted that specialist's office, she was informed by the nurse practitioner and manager that they are not familiar with EHS, had never heard of it, and also indicated that G could not be seen until after the fall 2015 school year started.<sup>5</sup> Fay still refused any cooperation with G's parents or to help in any

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<sup>5</sup> When that doctor did meet with G and his parents, she made no diagnosis but instead recommended that he take prescription medication to dull the pain but not cure G's problem. These drugs have side effects that have been warned against by G's doctor.

way with the Wi-Fi systems even though even this latest doctor recommended reduction of electronics exposure in school, after having seen G.

(59) Having no other choice because of Fay's refusals to help or even to meet with the parents for the purposes described above, Mother, Father and G commenced this action by filing their original complaint with this Court on August 12, 2015. In that complaint, the parents and G sought a court order directing Fay to cooperate with G's parents in the manner they had been requesting for 18 months. Specifically, the original complaint was accompanied by a request to this Court asking for a court order directing that Fay and the parents were:

[o]rdered to meet and confer with each other on the Fay campus within the next five business day to attempt to find a workable solution to the concern that G's parents have about the physiological effects of the Fay Wi-Fi on their son when he is exposed to it in the Fay classrooms;

and

At this meet and confer session, in addition to any personnel Fay wishes to attend, the parents of G may be accompanied by a computer-installation expert of their choosing and an electrician. Defendant Fay will show the parents the specific classrooms in which G is scheduled to be taking classes this coming fall, commencing on September 9, 2015. The parents will be allowed to have with them in the classrooms a computer systems advisor and an electrician who can ascertain, and then confer with Fay and the parents about, the various ways they believe are available implement the following alternate options if they determine that any of these alternatives will probably reduce the current Wi-Fi emissions without impairing the internet access in the classrooms involved: ONE, installation of Ethernet cables to be used to connect the students' computers to the internet in those classrooms to which G will be assigned, instead of Fay's high-strength Wi-Fi; or TWO, making a determination as to whether, as is known to be possible with many of the Wi-Fi systems now in use, the Wi-Fi emissions on Fay's system can be reduced while G is in the classroom without losing their effectiveness to deliver access to the internet for other students; or THREE, making a determination as to whether there is a part of the classroom where the Wi-Fi emissions are less strong.



(60) The above-quoted prayer for relief contained substantially the same requests for cooperation which G's parents had been making for many months and which Fay had steadfastly refused. It was only after this relief was formally sought by the parents from this Court in this federal lawsuit that Fay agreed to have any meetings and discussion at all with the parents of G about Fay's Wi-Fi systems or its adverse effects on G. Moreover, Fay did not start these discussions because it had in its Handbook promised to work with any student to help with his or her physical needs and to support that child in any way possible, but rather only because Fay and Gustavson were going to be hauled into a hearing in federal court if they did not at least make some effort to be helpful to G and his parents. According, Fay finally relented from its 18-month refusal to work with G's parents concerning G's problem, and then only agreed to do so if the parents agreed to delay the hearing that had been set by the Court.

(61) However, by the time Fay and Gustafson finally relented and agreed to at least speak to G and his parents about the Wi-Fi problem and allow them and a computer and cable installation expert to look at the involved classrooms to try to find a solution, the summer was all but over and there was insufficient opportunity, before the school year started on September 9, 2015, to allow for anything like a meaningful review of the Wi-Fi systems at Fay, much less time to implement a workable solution before the school year commenced. When that did commence on September 9, 2015, Fay would only allow the parents and their representatives to come to the school to take certain measurements between 3:30 and 5:00 p.m. This allowed insufficient time to take full measurements of the classrooms G would be using and allowed no time to actually see all of the Wi-Fi systems, much less have them examined by an expert who might have determined a way

to lower their intensity in the rooms where G would be taking his classes. Moreover, Fay produced none of its paperwork relating to its Wi-Fi systems, none of its own testing results (although it claimed to have some), and not all of its communications from the manufactures of its Wi-Fi systems.

(62) Instead of a full review of the Wi-Fi systems and implementation of a workable solution, Fay has instead offered only an unworkable solution which was quite limited and simply did not stop G's symptoms. All Fay agreed to do was to separate G from the other students in each of his classroom by no more than six feet and then, as thus isolated by that distance, to allow him to use an Ethernet cable to connect to the internet rather than using the Wi-Fi. However, every other student in all of G's classes was allowed to continue to use the Wi-Fi.

(63) After Fay implemented use of an Ethernet cord for G, G's headaches continued. His parents decided to test how this arrangement was affecting the Wi-Fi emissions. They did so by measuring the Wi-Fi emissions in each of G's classrooms. These measurements were taken on various school days in later October, 2015 by using a so-called dosimeter device, which is a device able to detect the level of Wi-Fi emissions.

(64) To take these measurements, G went to his classes over several days carrying a dosimeter device in one of his pockets. This allowed measurement of the Wi-Fi emissions making contact with his body since the dosimeter was next to his body, in a pocket. The dosimeter is a small device that makes no noise, is not visible to any student or teacher, and does not interfere in any way with any class activity. Rather, the dosimeter device quietly measures Wi-Fi emissions in such a way that they can be accurately recorded and then later printed out and analyzed. The Dosimeter records the

Wi-Fi exposure on an on-going basis throughout the day so that, at the end of any day, its measurements can be reviewed to determine what the rate and intensity of the Wi-Fi emissions have been at any given time of the day.

(65) After taking these measurements for three days (October 27, 29 and 30, 2015), the readings revealed that at certain times of the school day, the Wi-Fi emission readings were very low and at other times of the day they were very high. These readings allowed G's parents to accurately determine what classroom G was in when the readings were high and when they were low. Moreover, when these readings were high, G's symptoms became aggravated and when they were low, they abated. These readings were placed into graphs which clearly showed the times of the day, and thus which classrooms G was in, during the high and low readings and during times when he experienced his symptoms.

(66) G's parents then sent these graphs to Fay to reveal to it in which classrooms during the day the high readings were occurring and, correspondingly, where G was suffering his symptoms. There was an obvious match. They then asked Fay to have its computer personnel meet and confer with them to attempt to determine why there were high readings in some of his classes and not in others, with the hopes that the high readings could be reduced, thus reducing or eliminating G's symptoms.

(67) Fay refused to make any attempt to work with the parents in light of these measurements and readings. It ignored the readings that had been taken during those several days. Instead, Fay ordered the parents not to use the dosimeter on threat of dismissing G from school if its use was continued. Despite the parent's request, Fay did nothing to determine why the emissions shown by the dosimeter readings were occurring

at the levels being shown, much less to attempt to lower the readings where they were shown to be high, even though it was when these high levels occurred that G's symptoms returned.

(68) Instead, Fay forbade G from bringing the dosimeter to school ever again, threatening to dismiss him from school if he did so.

(69) As a result. G's symptoms continued to occur on virtually every school day, while Fay has made no further effort to work with the parents to try to lower the Wi-Fi readings and thus abate G's symptoms. Therefore, commencing on December 1, 2015, G stopped attending classes and instead commenced studying his Fay courses at home, with a tutor, under an arrangement that does not allow G to come to the Fay campus for any reason, but requires him to keep up with the study in each of his courses so that he can attempt to pass his tests and thus allow him to continue at Fay. Fay has specifically warned G's parents that he must keep up with the curriculum. However, it has also specified that this arrangement will be terminated if either Mother or Father in any way communicates with the school teachers about any matter at all. All communications must be through a tutor, thus making it much more difficult to obtain homework assignments.

(70) Moreover, despite the fact that this could be easily done with no disruption to the classes themselves, and done at no expense to Fay, Fay has refused to allow G to listen in to the classes as they occur or even to have them taped-recorded so that G, his parents, and tutor can review them with G on a daily basis. Fay has refused this despite the fact that it would obviously allow G to enjoy a much more complete educational experience in each of his required classes. Fay's teachers do not communicate with G's tutor about the daily lesson plans, despite the ease by which this could be accomplished,

and do not otherwise communicate with him in any way that would allow him to understand the objects of the course or the plan of the teacher. Fay has also refused to allow G to come onto the campus for any reason at all, even if it would involve activities that did not expose him to Wi-Fi.

(71) G has therefore been forced into home schooling on a leave. This deprives him of substantial benefits for which his parents have paid and to which he is entitled, including presence in his classroom and interaction with his peers, teachers, advisor, and the athletic program. He is at home and isolated from all of these benefits. Fay has done nothing further to help G or to attempt to reduce its Wi-Fi emissions.

**COUNT I**  
**(Violation of the Americans with Disabilities Act)**

(72) Plaintiffs repeat and reallege each of the allegations set forth in paragraphs 1 through 71, above, as if separately pleaded herein in their entirety.

(73) Under the requirements of the ADA, when a disability affects a substantial life function, such as learning or concentration, or a student's safety at a school, the student or parents involved may request that the school make reasonable accommodations to allow the student to partake in the full enjoyment of the services, facilities, privileges and advantages offered by the school, provided that the requested accommodation does not require the school to make a substantial modification of its programs or its academic standards. The school must then offer a reasonable accommodation.

(74) In G's case, this means a reasonable accommodation to his EHS, if doing so can be accomplished without disrupting Fay's program or academic standards. G's Mother and Father have offered to work with Fay, even at their own expense, to examine

the classroom Wi-Fi system, and to attempt installation of a reasonable alternative to their industrial capacity Wi-Fi for use when G is in attendance. Fay has refused to do anything meaningful and has ignored measurements, other data, and medical and other reports supporting the need to make an accommodation.

(75) Until such an accommodation is made, G will suffer injury and loss, including (i) delay, until a court order is entered, of the enjoyment of the completion of his last three of his nine years at Fay, (ii) disruption of his educational plan now six years in the making and less than three years from completion, (iii) loss of the relationships he has developed with various of the Fay faculty and with it the benefits of those relationships in guiding and teaching G as the academic curriculum becomes more challenging in the later academic years, (iv) loss of his peer relationships, developed over the last six years, just as he heads into his adolescent years where those relationships are more valuable to his personal and healthy growth, (v) loss of the opportunity to graduate from Fay and receive a diploma certifying the same, and (vi) loss of the enjoyment and companionship of his peers at Fay and the shared sense of accomplishment that earning a diploma with them will provide.

(76) Moreover, instead of all these benefits just enumerated, G will find himself abruptly placed in limbo in an alternate educational program completely new to him and to which he will have to adjust without any support from his long-time peers, or the faculty and staff at the Fay school who have counseled him for the last six years. All of these losses are irreparable injuries that cannot be fully compensated by any award of money damages, and thus warrant equitable relief in the form of an injunction compelling Fay to provide an alternate internet-access system in one of the various ways that this can

be accomplished, ways that have not yet been attempted by Fay, as will be shown at trial or at a hearing before trial. These alternatives include, among others, (i) switching to Ethernet cable completely in the classrooms attending by G, thereby eliminating Wi-Fi in those classrooms completely; (ii) reducing the level of Wi-Fi emissions allowed to enter each classroom, and doing so while requiring several students seated next to G in each classroom to use Ethernet cable rather than Wi-Fi, thus placing more distance between G and the nearest laptop or other device using Wi-Fi; (iii) reducing the number of non-laptop devices in the classroom which devices are active while class is in session; (iv) reducing the Wi-Fi or even shutting it off completely in relation to any classroom in which it is not currently being used; (v) maintaining the level of Wi-Fi emissions at all times at lower than the levels at which Fay currently sets those emissions, which are frequently set to the highest level; or (vi) provide one of several classrooms that could be workably arranged for this purpose to be completely Wi-Fi free so that G and his 15 or so classmates could take all of their classes in that classroom, using Ethernet cable instead of Wi-Fi to access the internet. Fay has tried none of these approaches, but rather has threatened G and his parents, demanded that G takes drugs that will not solve the problem, and has made continuing G's academic career at Fay most difficult, rather than less difficult, simply because he and his parents have requested assistance.

**COUNT II**  
**(Damages for Breach of Contract)**

(77) Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 76, as if separately pleaded herein in their entirety.

(78) The actions by Fay as described herein have breached the contractual promises Fay made to G, Mother and Father as stated and undertaken in the Handbook.

(79) All plaintiffs have been damaged as a result of this breach in amounts that will be proved at trial. For the reasons stated above, and particularly in paragraphs 75 and 76, plaintiffs' contract rights cannot be adequately and fully compensated by money damages and warrant the same injunctive relief described above.

### **COUNT III**

#### **(Misrepresentation)**

(80) Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 76, as if separately pleaded herein in their entirety.

(81) Fay's Handbook statements quoted in paragraphs 24, 25, and 26 are false representation because despite all those statements and promises, Fay has acted in complete disregard of them and indeed completely contrary to the way it represented that it would act.

### **COUNT IV**

#### **(Damages for Negligence)**

(82) Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 76, as if separately pleaded herein in their entirety.

(83) By Fay's failure to have made any accommodation to G's EHS while G is in the custody of Fay and under its control, Fay has failed to exercise ordinary care for G's safety. This amounts to negligence and has proximately injured G.

(84) G has been damaged as a result of this negligence in amounts that will be proved at trial.

WHEREFORE, G, Mother and Father pray for judgment as follows:

(A) For a preliminary and permanent injunction ordering Fay to accommodate G's disability and honor its contract promises in the manner



described in this First Amended Complaint, with the specifics of such injunction to be presented to this Court at a hearing or trial;

- (B) For damages in an amount to be proved at trial;
- (C) For costs of suit and attorneys' fees; and,
- (D) For such other and further relief as this Court deems just and proper.

**DEMAND FOR TRIAL BY JURY**

Pursuant to Rule 38, Federal Rules of Civil Procedure, Plaintiffs G, Mother, and Father demand trial by jury on all issues so triable.

Dated: December 8, 2015

Respectfully submitted,

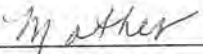
/s/ John J.E. Markham, II  
John J.E. Markham, II  
(BBO No. 638579)  
MARKHAM & READ  
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jmarkham@markhamread.com  
Attorney for the Plaintiffs

**Verification of the First Amended Complaint**

**[A verification with the full name  
of the Declarant will be filed under seal]**

Mother, declares under penalty of perjury that she has read the foregoing First Amended Complaint and believes that its contents are true to the best of her memory and belief.

Executed this 8<sup>th</sup> Day of December, 2015, in Worcester County, Massachusetts.

  
\_\_\_\_\_  
Mother

# Exhibit A

Letter from Dr. Jeanne Hubbach, dated August 7, 2014

JEANNE T. HUBBUCH, M.D.

124 WATERTOWN STREET, SUITE 2F  
WATERTOWN, MASSACHUSETTS 02472  
TELEPHONE (617) 744-0401  
FAX (617) 744-5346

August 7, 2014

Mr. Alan Clarence  
Director of Operations  
Fay School  
48 Main Street  
Southborough, MA 01772

RE: G [REDACTED]  
DOB: [REDACTED]

To Whom It May Concern:

G [REDACTED] is an 11 year old boy who has attended the Fay School in Southboro, MA since 2009 (Grades 1-5). He was in good health with no unusual complaints or absences until the Spring of 2013. Between 3/28/13 and 5/23/13, he had four absences and 1 early release due to complaints of headaches or stomach aches. He had no unusual complaints over the Summer. He returned to school and attended full time in The Root Building beginning fall of 2013.

The Fay School has had WIFI since 2009 in the general school areas. In February 2013, The Root Building where he attended during 2013-2014 school year upgraded the WIFI from 2.5 to 5 GHZ.

G [REDACTED] has had a pattern of symptoms occurring beginning in September where he was released early after seeing the nurse or absent. His complaints were headache, chest pressure, dizziness, nausea, tinnitus, eye pressure. When he went home he immediately felt better. He had no complaints on weekends or school breaks and has had no similar complaints since out of school this Spring. The following are the dates of G [REDACTED] releases/absences:

**2013-2014 School Year**

- 9/9/13 - Home Early at 1:15pm
- 9/23/13 - Home Early at 11:15am
- 10/24/13 - Home Early at 12:00pm
- 10/28/13 - Home Early at 1:30pm
- 11/20/13 - Absent

- 4/11/14 - Home Early at 11:45am
- 4/15/14 - Home Early at 2:40pm
- 4/18/14 - Absent
- 5/1/14 - Home Early at 2:35pm
- 5/14/14 - Absent
- 5/27/14 - Absent
- 5/28/14 - Absent

#### **2012-2013 School Year**

- 3/28/13 - Absent
- 3/29/13 - Absent
- 4/1/13 - Home Early at 12:00pm
- 5/22/13 - Absent
- 5/23/13 - Absent

Of note, he also complained of milder headache and dizziness at other times but not so severe as when he went to the nurse or was released.

It is significant to know that G [REDACTED] is a good student who does well in school, likes attending school and has good friends at school. He participates in sports. Thus there is no secondary reason for his complaints. Also of significance is that his parents removed all WIFI and cordless phones in their home over two years ago because of their concern with possible health effects. G [REDACTED] does not have a cell phone.

Evaluation by G [REDACTED] pediatrician has not revealed any significant problems. He has a history of seasonal allergies and immediate IgE reactions to tree nuts and peanuts. He has [REDACTED]. None of these conditions explains his current symptom pattern.

It is known that exposure to WIFI can have cellular effects. The complete extent of these effects on people is still unknown. But it is clear that children and pregnant women are at the highest risk. This is due to the brain tissue being more absorbent, their skulls are thinner and their relative size is small. There are no studies that show that exposure to these two vulnerable groups is safe. We do not know the long term effects of microwave radiation on students and teachers. According to reports from the nurse at The Fay School, there has been an increase over the last year of students complaining of similar symptoms, i.e. headaches, dizziness, nausea and chest pressure. A good reference for this is website of Environmental Health Trust ([www.ehtrust.org](http://www.ehtrust.org)).

It is my opinion, based on my medical training and experience, especially my training in Environmental Medicine that G [REDACTED] is being adversely affected by prolonged exposure to WIFI at school. Due to biochemical individuality some people are more susceptible to these effects than others. This should be considered seriously since subtle changes are occurring for all even if it is apparent in only a few.



Page 3 - G [REDACTED]

I agree that the precautionary principle should apply here. Many countries have adopted this principle when approaching young children and have adopted stricter regulations to reduce exposure to wireless radiation.

If G [REDACTED] continues to be exposed on a regular basis to WIFI, it is possible that his intermittent symptoms will become more constant and interfere with his school performance.

Sincerely,



Jeanne Hubbuch, MD

JH/ma

cc: [REDACTED] (mother)  
Susan Ruskowski (School Nurse)


# Exhibit B

Letter from Dr. Martha Herbert, dated September 12, 2015

**HARVARD MEDICAL SCHOOL**

Martha R. Herbert, Ph.D., M.D.  
Assistant Professor, Neurology  
Director, TRANSCEND Research Program  
[www.transcendresearch.org](http://www.transcendresearch.org)  
[transcend@partners.org](mailto:transcend@partners.org)

September 12, 2015

**MASSACHUSETTS  
GENERAL HOSPITAL**  
  
Center for Biomedical Imaging  
77 Avenue Louis Pasteur, Room 10.043  
Charlestown, Massachusetts 02129  
Phone: 617-724-5920  
m: [herbert@mgh.harvard.edu](mailto:herbert@mgh.harvard.edu)  
<https://connect.mgh.harvard.edu/profiles/display/Person/47629>

To Whom It May Concern:

I am writing with regard to the situation of "G", a 12 year-old Fay student who has been complaining of chronic frequent headaches, essentially daily during school but almost entirely absent over the summer vacation. Concern has arisen that his symptoms may be associated with the Wi-Fi exposure at school over a prolonged period..

I am a pediatric neurologist and neuroscientist at the Massachusetts General Hospital, and a faculty member in the Department of Neurology of Harvard Medical School. I also have a private medical practice where I evaluated G, and I have reviewed his other assessments. I performed a neurological examination which was essentially except for a few mild soft signs (slow finger-tapping and upper extremity overflow with stress gait), not out of the range of normal for a boy his age evaluated mid-afternoon when he was tired after a four hour evaluation at another site with no opportunity for lunch.

I have also reviewed the documentation of the dosimetry measurements of G's daily exposure. [A copy is attached] This is a remarkable document in its careful explanation and quantification of G's specific exposures. These exposures are significant and accumulate during the course of the day and over time. The physiological depletion most likely associated with these exposures will also be cumulative, and increase G's risk for further symptoms and health problems.

Based on the evidence both in the literature and in the documentation of Gs exposures and symptom patterns, I think it is entirely reasonable to diagnose G with Electromagnetic Hypersensitivity Syndrome, and to use the diagnostic code Idiopathic Environmental Intolerance, ICD10-T78.8 in lieu of a specific code for EHS.

The accommodations being requested, of using Ethernet ports for cable access to the internet rather than W-Fi, are reasonable if they are present in or can be inserted into the classrooms.

I set forth below my involvement with this emerging medical issue and how it has informed my conclusion about "G"

I became interested in the health and brain effects of electromagnetic frequency (EMF) and radiofrequency radiation (RFR) exposures in relation to my brain research because I was interested in how such exposures might alter brain function. In order to familiarize myself in more detail existing literature on the pathophysiological impacts of EMF/RFR, I coauthored a 40,000 word chapter in the 2012 update of the Bioinitiative, <sup>1</sup> and published an updated 30,000 word version of that paper ("Autism and EMF? Plausibility of a Pathophysiological Link") in 2013 in two parts in the peer reviewed journal *Pathophysiology*. <sup>2,3</sup> My intention was to assess the plausibility of an association between



increasing incidence of autism spectrum disorder and increasing EMF/RFR exposures. Rather than directly address the epidemiological issues, I looked at the parallels between the pathophysiological features documented in autism and the pathophysiological impacts of EMF/RFR documented in the peer-reviewed published scientific literature.

I will include here a brief summary of the paper (prepared for a lay audience) of the features of EMF/RFR that I reviewed (with citations at the end of this letter):

- EMF/RFR stresses cells. It lead to cellular stress, such as production of heat shock proteins, even when The EMF/RFR isn't intense enough to cause measurable heat increase. <sup>4-6</sup>
- EMF/RFR damages cell membranes, and make them leaky, which makes it hard for them to maintain important chemical and electrical differences between what is inside and outside the membrane. This degrades metabolism in many ways – makes it inefficient. <sup>7-15</sup>
- EMF/RFR damages mitochondria. Mitochondria are the energy factories of our cells. Mitochondria conduct their chemical reactions on their membranes. When those membranes get damaged, the mitochondria struggle to do their work and don't do it so well. Mitochondria can also be damaged through direct hits to steps in their chemical assembly line. When mitochondria get inefficient, so do we. This can hit our brains especially hard, since electrical communication and synapses in the brain demands huge amounts of energy.
- EMF/RFR creates "oxidative stress." Oxidative stress is something that occurs when the system can't keep up with the stress caused by utilizing oxygen, because the price we pay for using oxygen is that it generates free radicals. These are generated in the normal course of events, and they are "quenched" by antioxidants like we get in fresh fruits and vegetables; but when the antioxidants can't keep up or the damage is too great, the free radicals start damaging things.
- EMF/RFR is genotoxic and damages proteins, with a major mechanism being EMF/RFR-created free radicals which damage cell membranes, DNA, proteins, anything they touch. When free radicals damage DNA they can cause mutations. This is one of the main ways that EMF/RFR is genotoxic – toxic to the genes. When they damage proteins they can cause them to fold up in peculiar ways. We are learning that diseases like Alzheimer's are related to the accumulation of misfolded proteins, and the failure of the brain to clear out this biological trash from its tissues and fluids.
- EMF/RFR depletes glutathione, which is the body's premier antioxidant and detoxification substance. So on the one hand EMF/RFR creates damage that increases the need for antioxidants, and on the other hand they deplete those very antioxidants. <sup>1, 16</sup>
- EMF/RFR damages vital barriers in the body, particularly the blood-brain barrier, which protects the brain from things in the blood that might hurt the brain. When the blood-brain barrier gets leaky, cells inside the brain suffer, be damaged, and get killed. <sup>1, 16, 17</sup>
- EMF/RFR can alter the function of calcium channels, which are openings in the cell membranes that play a huge number of vital roles in brain and body. <sup>18-27</sup>
- EMF/RFR degrades the rich, complex integration of brainwaves, and increase the "entropy" or disorganization of signals in the brain – this means that they can become less synchronized or coordinated; such reduced brain coordination has been measured in autism. <sup>28-40</sup>

- EMF/RFR can interfere with sleep and the brain's production of melatonin. <sup>41-43</sup>
- EMF/RFR can contribute to immune problems. <sup>44-50</sup>
- EMF/RFR contribute to increasing stress at the chemical, immune and electrical levels, which we experience psychologically. <sup>51-57 17, 58-62 63-68</sup>

Please note that:

1. There are a lot of other things that can create similar damaging effects, such as thousands of "xenobiotic" substances that we call toxicants. Significantly, toxic chemicals (including those that contain naturally occurring toxic elements such as lead and mercury) cause damage through many of the same mechanisms outlined above.
2. In many of the experimental studies with EMF/RFR, damage could be diminished by improving nutrient status, particularly by adding antioxidants and melatonin. <sup>69-72</sup>

I understand that the concept of electromagnetic hypersensitivity is not always well understood in the medical and scientific communities. Indeed, the inter-individual variability is perplexing to those who would expect a more consistent set of features.

But given the range of challenges I have listed that EMF/RFR poses to core processes in biological systems, and given the inter-individually variable vulnerability across these symptoms, it is really not surprising that there would be subgroups with different combinations of symptom clusters.

It also appears to be the case that the onset and duration of symptoms or even brain response to EMR/RFR can be variable. This again is to be expected given the mediation of these symptoms through a variety of the above-listed pathophysiological processes, many of which differ in scale (ranging from molecular to cellular to tissue and organ) and time course of impact. The different parts of the body also absorb this energy differently, both because of their biophysical properties and as a function of their state of health or compromise thereof.

Here is a list of subgroups of symptom clusters identified by a group of German physicians, that exemplifies these variability issues:

- |                |   |
|----------------|---|
| <b>Group 1</b> | no symptoms   |
| <b>Group 2</b> | sleep disturbance, tiredness, depressive mood   |
| <b>Group 3</b> | headaches, restlessness, dazed state, irritability, disturbance of concentration, forgetfulness, learning difficulties, difficulty finding words  |
| <b>Group 4</b> | frequent infections, sinusitis, lymph node swellings, joint and limb pains, nerve and soft tissue pains, numbness or tingling, allergies  |
| <b>Group 5</b> | tinnitus, hearing loss, sudden hearing loss, giddiness, impaired balance, visual disturbances, eye inflammation, dry eyes   |
| <b>Group 6</b> | tachycardia, episodic hypertension, collapse  |
| <b>Group 7</b> | other symptoms: hormonal disturbances, thyroid disease, night sweats, frequent urge to urinate, weight increase, nausea, loss of appetite, nose bleeds, skin complaints, tumors, diabetes |

In the above set of symptoms we find virtually all of G's symptoms, and then more that he hopefully will not develop in the future from further avoidable deterioration. Further deterioration can occur with continued exposure to radiofrequency radiation.

Sincerely yours,



Martha Herbert PhD, MD

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# Exhibit C

(Collective)

Letter dated July 28, 2014 from Dr. David O. Carpenter, Director, Institute for Health and the Environment, University of Albany

Letter dated July 25, 2014 from Martin Blank, Ph.D., leading expert on the effects of electromagnetic fields on DNA and biology

Letter dated July 16, 2014 from Stephen Sinatra, M.D., co-founder of Doctors for Safer Schools

Letter dated July 24, 2014, from Olle Johansson, Associate Professor of neuroscience at Karolinska Institute, in Stockholm, Sweden



UNIVERSITY AT ALBANY  
State University of New York

Institute for Health and the Environment



WHO Collaborating Center  
in Environmental Health

July 28, 2014

Board of Trustees  
Fay School  
48 Main Street  
Southborough, MA 01772

Re: Advisability of WiFi in schools

Dear Sirs/Madams:

This is concerning potential adverse health effects associated with exposure to radiofrequency/microwave (RF/MW) radiation, specifically that from wireless routers and wireless computers. I am writing to express concern that students at your school are experiencing electrosensitivity symptoms from these technologies.

I am a public health physician who has been involved in issues related to electromagnetic fields (EMFs) for several decades. I served as the Executive Secretary for the New York Powerline Project in the 1980s, a program of research that showed that children living in homes with elevated magnetic fields coming from powerlines suffered from an elevated risk of developing leukemia. I served as Director of the Wadsworth Laboratory of the New York State Department of Health, as well as Dean of the School of Public Health at the University at Albany/SUNY. I have edited two books on effects of EMFs, ranging from low frequency fields to radiofrequency/ microwave radiation, or the kind emitted by WiFi routers, cell phones, neighborhood antennas and wireless computer equipment. I served as the co-editor of the BioInitiative Report 2012 (Bioinitiative.org), a comprehensive review of the literature showing biological effects at non-thermal levels of exposure, much of which has since been published in the peer-reviewed journal, *Pathophysiology* (attached). Also, I served on the President's Cancer Panel that examined radiation exposures as they relate to cancer risk, in 2009, and a report from that testimony is also attached. Thus, this is a subject which I know well, and one on which I take a public health approach rooted in the fundamental principle of the need to protect against risk of disease, even when one may not have all the information that would be desirable.

There is clear and strong evidence that intensive use of cell phones increases the risk of brain cancer, tumors of the auditory nerve and cancer of the parotid gland, the salivary gland in the cheek by the ear. The evidence for this conclusion is detailed in the attached publications. The WHO's International Agency for Research on Cancer has also classified the radiation from both cell phones and WiFi as a Class 2B "Possible Carcinogen" (2011). WiFi uses similar radio-frequency radiation as cell phones (in the 1.8 to 5.0 GHz range). The difference between a cell phone and a WiFi environment, however, is that while the cell phone is used only intermittently, and at higher power, a WiFi environment is continuous, and transmitting even when not being used. In addition, WiFi transmitters are indoors, where people (and in this case, children) may be very close by, or certainly close to devices using the WiFi, such as wireless computers, iPads and smart boards, the radiation from which can be intolerable to sensitive people.



Furthermore, commercial routers, like those in schools, operate at much higher wattage than consumer routers. They are designed to penetrate through materials like cement, wood and brick, to handle dozens to hundreds of users, and to reach into outdoor areas, so industrial grade routers are of much greater concern.

An additional consideration to appreciate is that it is not only the power of wireless radiation that causes biological dysregulation, but the frequencies, pulsing, amplitude, and the quantity and kind of information being transmitted that can have effects as well. These 'non-thermal effects' have been shown in thousands of studies to be biologically active, and may be more important than the effects from the power. Thus, while a router may be in the ceiling, or not right next to a student, teacher or administrator, the known biological and health effects, particularly the non-thermal ones, are still very much occurring.

Finally, while acute electrosensitivity symptoms, like the ones I understand your students are experiencing, are of course of great concern (such as cognitive effects impairing attention, memory, energy levels, and concentration; cardiac irregularities, including in children; or, headaches or other symptoms in students wearing braces), the full effects for society from chronic and cumulative exposures are not known at this time. Given what we do know, however, including the DNA effects, I must, as a public health physician, advise minimizing these exposures as much as possible. Indications are that cell phones and wireless technologies may turn out to be a serious public health issue, comparable to tobacco, asbestos, DDT, PCBs, pesticides and lead paint, or possibly worse given the ubiquitous nature of the exposures. While unfortunately we must wait for federal regulation to catch up with the science, the prudent thing to do in the interim would be to exercise precaution at every opportunity.

Computers and the world-wide web have tremendous value in education, but the value also depends on how these are used in numerous respects. As wired internet connections do not pose radiation risk, are readily available, are faster and more secure than WiFi, and are now even available for certain tablets, I highly recommend you factor the risks I have described into your technology planning. At the same time, I would urge you to take the complaints of your students very seriously, and potentially involve the school nurse and teachers in helping to assess the extent of the electrosensitivity problem among students at the school.

An excellent reference on the EMF and electrosensitivity science is "Electrosensitivity and Electrohypersensitivity—A Summary" (2013) authored by M.J. Bevington and available through Electrosensitivity-U.K. ([www.es-uk.info/](http://www.es-uk.info/))

If I can be of further help, please do not hesitate to call.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "David O. Carpenter".

David O. Carpenter, M.D.  
Director, Institute for Health and the Environment  
University at Albany

Enclosures



**Martin Blank, PhD**  
**Department of Physiology and Cellular Biophysics**  
**Columbia University**  
**New York, NY 10032**

July 25, 2014

Mr. Thomas McKean, President, Board of Trustees  
Mr. James Shay, President-Elect, Board of Trustees  
Fay School  
48 Main Street  
Southborough, MA01772

To the Board of Trustees,

It has been brought to my attention that school children have become symptomatic at your school after installation of WiFi. I am writing to express my concern and to encourage you to review the independent science on this matter.

I can say with conviction, in light of the science, and in particular in light of the cellular and DNA science, which has been my focus at Columbia University for several decades, putting radiating antennas in schools (and in close proximity to developing children) is an uninformed choice. Assurances that the antennas are within 'FCC guidelines' is meaningless today, given that it is now widely understood that the methodology used to assess exposure levels only accounts for one type of risk from antennas, the thermal effect from the power, not the other known risks, such as non-thermal frequencies, pulsing, signal characteristics, etc. They fail also to consider multiple simultaneous exposures from a variety of sources in the environment, and cumulative exposures over a lifetime. Compliance with FCC guidelines, thus, unfortunately, is not in any way an assurance of safety today, as the guidelines are fundamentally flawed. Until the guidelines and advisories in the U.S. are updated, the intelligent thing for your Board of Trustees to do is to exercise the Precautionary Principle and hard wire all internet connections.

I know this might be disappointing to hear, as I understand you have invested in the WiFi. But there is no amount of money that could justify the added physiological stress from wireless antenna radiation and its many consequences, most in particular for children. Our research has shown that the cellular stress response, a protective reaction that is indicative of cellular damage, occurs at levels that are deemed 'safe'. Many other harmful reactions have been reported, such as the impairment of DNA processes that can account for the observed increased risk of cancer, as well as the potential cognitive decline, and sleep effects that may be due to impairment of the blood brain barrier. The DNA effects are of particular concern for future generations, an area of research that is just beginning to raise alarms. As with other environmental toxic exposures, children are far more vulnerable than adults, and they will have longer lifetimes of exposure.

The science showing reasons for concern about the microwave radiation emitted by antennas is abundant and there will be a day of reckoning. As I explain in my recent book,

*Overpowered*, The Precautionary Principle instructs us that in the face of serious threats, a lack of scientific 'certainty' never justifies inaction. The changes occurring at the molecular level, and known associations with many diseases, are sufficient at this time to give us pause and to recommend minimizing exposures to these fields, in our homes, schools, neighborhoods and workplaces. There is significant potential for risk, and to very large numbers of people, and the effects are occurring nonetheless whether or not we are noticing them.

I recommend you hardwire the internet connections at your school, and also encourage students to use hard wired connections at home for internet access, as well as for all computer equipment connections and voice communications.

Sincerely yours,



Martin Blank, PhD  
mb32@columbia.edu,



**Martin Blank, PhD**, Special Lecturer and (ret.) Associate Professor, Columbia University, Department of Physiology and Cellular Biophysics. Dr. Blank is a leading expert in the effects of electromagnetic fields on DNA and biology, and Past President of the Bioelectromagnetics Society. He holds two PhDs, in physical chemistry and in colloid science, an interdisciplinary field involving chemistry, physics and nanoscience. Dr. Blank was author of the BioInitiative Report's section on the impact of electromagnetic fields on Stress Proteins; Editor of the journal *Pathophysiology's* special issue on Electromagnetic Fields (2009); and co-author of "Electromagnetic fields and health: DNA based dosimetry" (2012), which recommends a new way of assessing the biological impact of electromagnetic fields across the spectrum, using DNA. Dr. Blank's book, *"Overpowered—What Science Tells Us About the Dangers of Cell Phones and Other WiFi-Age Devices"*, was published in 2014.





**STEPHEN T. SINATRA M.D., F.A.C.C.**

F.A.C.N., C.N.S., C.B.T.,

*Integrative Metabolic Cardiology*

July 16, 2014

Chairman and Trustees  
Fay School  
48 Main Street  
Southborough, MA 01772

RE: Wi-Fi in Schools

Dear Chairman and Trustees:

I am writing this letter on behalf of concerned parents of children who are attending schools with Wi-Fi technology. I'm a cardiologist and co-founder of Doctors for Safer Schools, an organization dedicated to informing teachers, parents and superintendents about the uncertainty and possible environmental health hazards of Wi-Fi technologies.

The heart is a delicate and complex electromagnetic organ that can be adversely affected by exogenous signals from wireless technology and microwave radiation. For this reason it is unwise to expose students and teachers to Wi-Fi radiation for internet access, especially when safer alternative wired options are available. Children are particularly vulnerable to this radiation and the incidents of cardiovascular events including sudden cardiac arrest, seems to be increasing, especially among young athletes (up to the age of 19). In some cases this is due to undetected heart defects, blunt trauma to the heart in contact sports, and heat stress during strenuous exercise, but in instances these irregularities may be exacerbated by or due to microwave signals interfering with the autonomic nervous system that regulates the heart.

I know this because I am a board certified cardiologist and have been a Fellow of the American College of Cardiology since 1977. At the Manchester Memorial Hospital in Connecticut, I served in several roles, including Chief of Cardiology, Director of Cardiac Rehabilitation, and Director of Medical Education.

In both Canada and the United States a large number of students are complaining that they feel unwell in classrooms that have Wi-Fi technology. These complaints have been investigated and what emerges is the following:

1. Symptoms common among these students include headaches, dizziness, nausea, feeling faint, pulsing sensations or pressure in the head, chest pain or pressure, difficulty

concentrating, weakness, fatigue, and a racing or irregular heart accompanied by feelings of anxiety. These symptoms may seem diverse but they indicate autonomic dystonia or dysfunction of the autonomic nervous system.

2. Symptoms do not appear in parts of the school that do not have this technology (Wi-Fi-free portables) and they do not appear in homes that do not have wireless technology.

3. We know that the heart is sensitive to and can be adversely affected by the same frequency used for Wi-Fi (2.4 GHz) at levels a fraction of federal guidelines (less than 1%) and at levels that have been recorded in two Ontario schools with Wi-Fi technology.

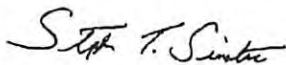
4. The incidence of sudden cardiac arrests (SCA) among young athletes is increasing and doctors don't know why. In one small Ontario community, the number of students experiencing SCA is disturbingly high. Whether WiFi and nearby cell phone antennas exacerbate SCA needs to be investigated further before students are subjected to these fields.

In conclusion it is unwise to install wireless technology (WiFi) in schools. We do not know what the long-term effects of low-level microwave radiation are on students and teachers. The safety of this technology on children has not been tested and I would advise that you follow the precautionary principle that states the following:

*"In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."*  
(Rio Conference 1992).

The principle implies that we have a social responsibility to protect the public from exposure to harm, when scientific investigations have found a plausible risk. That "plausible risk" exists for microwave radiation at very low levels. These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result. In some legal systems the application of the precautionary principle has been made a statutory requirement.

Sincerely,



Stephen T. Sinatra, M.D., F.A.C.C., F.A.C.N., C.N.S





**Karolinska Institutet**  
Department of Neuroscience  
Experimental Dermatology Unit

Stockholm, July 24, 2014

Mr. Thomas McKean, President, Board of Trustees  
Mr. James Shay, President-Elect, Board of Trustees  
Fay School  
48 Main Street  
Southborough, MA 01772

Ladies and Gentlemen,

It has been brought to my attention that children in your school are physically being impacted by radiation from WiFi antennas, and that some of the student's reactions have been severe. I was concerned to learn this. It is unwise to chronically expose children to this type of radiation, as their bodies are more sensitive than adults and the radiation has been shown to impair not just physiological functioning but cognitive function and learning.

Radiation of the kind emitted by WiFi transmitters impacts attention, memory, perception, learning capacity, energy, emotions and social skills. There is also diminished reaction time, decreased motor function, increased distraction, hyperactivity, and inability to focus on complex and long-term tasks. In some situations, children experience cardiac difficulties. In one Canadian school district, incidence of cardiac arrest in children was 40x the expected rate, and defibrillators have had to be placed at each school. Online time, particularly multi-tasking in young children, has been linked with a chronically distracted view of the world preventing learning critical social, emotional and relational skills. There is a physiological as well as psychological addiction taking place. I am sure, that as stewards of the lives of the children in your charge, you would not wish any of these outcomes.

Given the large and growing body of science indicating biological and health effects from the radiation emitted by antennas, it would be most imprudent at this time to permit wireless antennas on—or inside—your property. Understand the FCC exposure guidelines only protect against the acute power density, or acute thermal, effects, and they do nothing to protect against the other aspects of the radiation's risk, such the frequencies, amplitude, pulsing, intensity, polarity and biologically disruptive information content. Thus, until the FCC establishes guidelines for the non-thermal effects, any reliance by your school on current FCC guidelines, based solely on *thermal effects* would necessarily be incomplete. I urge a school of your caliber to be a leader on this issue, and appreciate that two wrongs do not make a right.

I enclose for your review the transcript of the Seletun Scientific Statement laying out the key concerns on this topic. If I can be of further help, please, do not hesitate to be in touch.

Yours truly,

Olle Johansson, Associate Professor  
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# Exhibit D

United States Environmental Protection Agency Publication



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JUL 16 2002

OFFICE OF  
AIR AND RADIATION

Ms. Janet Newton  
President  
The EMR Network  
P.O. Box 221  
Marshfield, VT 05658

Dear Ms. Newton:

This is in reply to your letter of January 31, 2002, to the Environmental Protection Agency (EPA) Administrator Whitman, in which you express your concerns about the adequacy of the Federal Communications Commission's (FCC) radiofrequency (RF) radiation exposure guidelines and nonthermal effects of radiofrequency radiation. Another issue that you raise in your letter is the FCC's claim that EPA shares responsibility for recommending RF radiation protection guidelines to the FCC. I hope that my reply will clarify EPA's position with regard to these concerns. I believe that it is correct to say that there is uncertainty about whether or not current guidelines adequately treat nonthermal, prolonged exposures (exposures that may continue on an intermittent basis for many years). The explanation that follows is basically a summary of statements that have been made in other EPA documents and correspondence.

The guidelines currently used by the FCC were adopted by the FCC in 1996. The guidelines were recommended by EPA, with certain reservations, in a letter to Thomas P. Stanley, Chief Engineer, Office of Engineering and Technology, Federal Communications Commission, November 9, 1993, in response to the FCC's request for comments on their Notice of Proposed Rulemaking (NPRM), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (enclosed).

The FCC's current exposure guidelines, as well as those of the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-ionizing Radiation Protection, are thermally based, and do not apply to chronic, nonthermal exposure situations. They are believed to protect against injury that may be caused by acute exposures that result in tissue heating or electric shock and burn. The hazard level (for frequencies generally at or greater than 3 MHz) is based on a specific absorption dose-rate, SAR, associated with an effect



that results from an increase in body temperature. The FCC's exposure guideline is considered protective of effects arising from a thermal mechanism but not from all possible mechanisms. Therefore, the generalization by many that the guidelines protect human beings from harm by any or all mechanisms is not justified.

These guidelines are based on findings of an adverse effect level of 4 watts per kilogram (W/kg) body weight. This SAR was observed in laboratory research involving acute exposures that elevated the body temperature of animals, including nonhuman primates. The exposure guidelines did not consider information that addresses nonthermal, prolonged exposures, i.e., from research showing effects with implications for possible adversity in situations involving chronic/prolonged, low-level (nonthermal) exposures. Relatively few chronic, low-level exposure studies of laboratory animals and epidemiological studies of human populations have been reported and the majority of these studies do not show obvious adverse health effects. However, there are reports that suggest that potentially adverse health effects, such as cancer, may occur. Since EPA's comments were submitted to the FCC in 1993, the number of studies reporting effects associated with both acute and chronic low-level exposure to RF radiation has increased.

While there is general, although not unanimous, agreement that the database on low-level, long-term exposures is not sufficient to provide a basis for standards development, some contemporary guidelines state explicitly that their adverse-effect level is based on an increase in body temperature and do not claim that the exposure limits protect against both thermal and nonthermal effects. The FCC does not claim that their exposure guidelines provide protection for exposures to which the 4 W/kg SAR basis does not apply, i.e., exposures below the 4 W/kg threshold level that are chronic/prolonged and nonthermal. However, exposures that comply with the FCC's guidelines generally have been represented as "safe" by many of the RF system operators and service providers who must comply with them, even though there is uncertainty about possible risk from nonthermal, intermittent exposures that may continue for years.

The 4 W/kg SAR, a whole-body average, time-average dose-rate, is used to derive dose-rate and exposure limits for situations involving RF radiation exposure of a person's entire body from a relatively remote radiating source. Most people's greatest exposures result from the use of personal communications devices that expose the head. In summary, the current exposure guidelines used by the FCC are based on the effects resulting from whole-body heating, not exposure of and effect on critical organs including the brain and the eyes. In addition, the maximum permitted local SAR limit of 1.6 W/kg for critical organs of the body is related directly to the permitted whole body average SAR (0.08 W/kg), with no explanation given other than to limit heating.

I also have enclosed a letter written in June of 1999 to Mr. Richard Tell, Chair, IEEE SCC28 (SC4) Risk Assessment Work Group, in which the members of the Radiofrequency Interagency Work Group (RFAWG) identified certain issues that they had determined needed to be addressed in order to provide a strong and credible rationale to support RF exposure guidelines.

Federal health and safety agencies have not yet developed policies concerning possible risk from long-term, nonthermal exposures. When developing exposure standards for other physical agents such as toxic substances, health risk uncertainties, with emphasis given to sensitive populations, are often considered. Incorporating information on exposure scenarios involving repeated short duration/nonthermal exposures that may continue over very long periods of time (years), with an exposed population that includes children, the elderly, and people with various debilitating physical and medical conditions, could be beneficial in delineating appropriate protective exposure guidelines.

I appreciate the opportunity to be of service and trust that the information provided is helpful. If you have further questions, my phone number is (202) 564-9235 and e-mail address is [hankin.norbert@epa.gov](mailto:hankin.norbert@epa.gov).

Sincerely,



Norbert Hankin  
Center for Science and Risk Assessment  
Radiation Protection Division

Enclosures:

- 1) letter to Thomas P. Stanley, Chief Engineer, Office of Engineering and Technology, Federal Communications Commission, November 9, 1993, in response to the FCC's request for comments on their Notice of Proposed Rulemaking (NPRM), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation
- 2) June 1999 letter to Mr. Richard Tell, Chair, IEEE SCC28 (SC4) Risk Assessment Work Group from the Radiofrequency Radiation Interagency Work Group

**CERTIFICATE OF SERVICE**

I, John J.E. Markham, II, do hereby certify that on December 8, 2015, I served the foregoing document via electronic mail on opposing counsel:

Schwartz Hannum PC  
11 Chestnut Street  
Andover, MA 01810-3744

/s/ John J.E. Markham, II  
John J.E. Markham, II